NWS FORM E-5 (11-88) (PRES. by NWS Instruction 10-924) **U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL WEATHER SERVICE**	HYDROLOGIC SERVICE AREA (HSA) **WFO Jackson, Mississippi**
MONTHLY REPORT OF HYDROLOGIC CONDITIONS	REPORT FOR: MONTH **April** YEAR **2010**
TO: Hydrometeorological Information Center, W/OH2 NOAA / National Weather Service 1325 East West Highway, Room 7230 Silver Spring, MD 20910-3283	SIGNATURE **Alan E. Gerard, Meteorologist In-Charge** DATE **05/10/2010**

When no flooding occurs, include miscellaneous river conditions, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (NWS Instruction 10-924)

☐ **An X inside this box indicates that no river flooding occurred within this hydrologic service area.**

Synopsis...

The month of April ended just as the month of March did with most of the area receiving below normal rainfall across the Hydrologic Service Area (HSA). The only exception to this trend was an area from northern Holmes and Carroll Counties to Lowndes and Noxubee Counties which covers portions of North Central and Northeast Mississippi.

The month started with high pressure shifting eastward allowing a warm, southerly flow to return to the region. A squall line developed ahead of cold front late on the 2nd and into the 3rd. Rainfall ranged from 0.25 inches over southwestern sections of the HSA to isolated amounts up to 2.50 inches over northern and southeastern sections. High pressure built into the region from the 4th to 6th.

Another cold front pushed across the area from the afternoon of the 7th into the 8th. Rainfall ranged from 1.00 to 2.50 inches over East and Southeast Mississippi and 1.50 inches or less over the remainder of the area. High pressure moved into the area during the day on the 8th bringing some nice spring weather to the region. High pressure moved east of the area on the 11th and continued to influence the region through the 16th. Some scattered showers and thunderstorms were observed in the southeasterly flow over southern portions of the area on the 14th.

A cold front pushed across the HSA on the 17th and stalled along the coast by the morning of the 18th. Some light showers were widely scattered across Northeast Louisiana and Central Mississippi from late on the 17th into the early hours of the 18th. Early on the 19th, a weak low pressure center over Southwest Louisiana began moving northeastward across Central and South Mississippi. Light scattered showers were generally less than 0.50 inches across the HSA. High pressure built into the region from the 20th through the 21st.

Winds shifted to the south on the 22nd and 23rd pumping warm, moist air into the area. A potent storm system, consisting of a strong upper low pressure center with a strong surface low and cold frontal system brought an

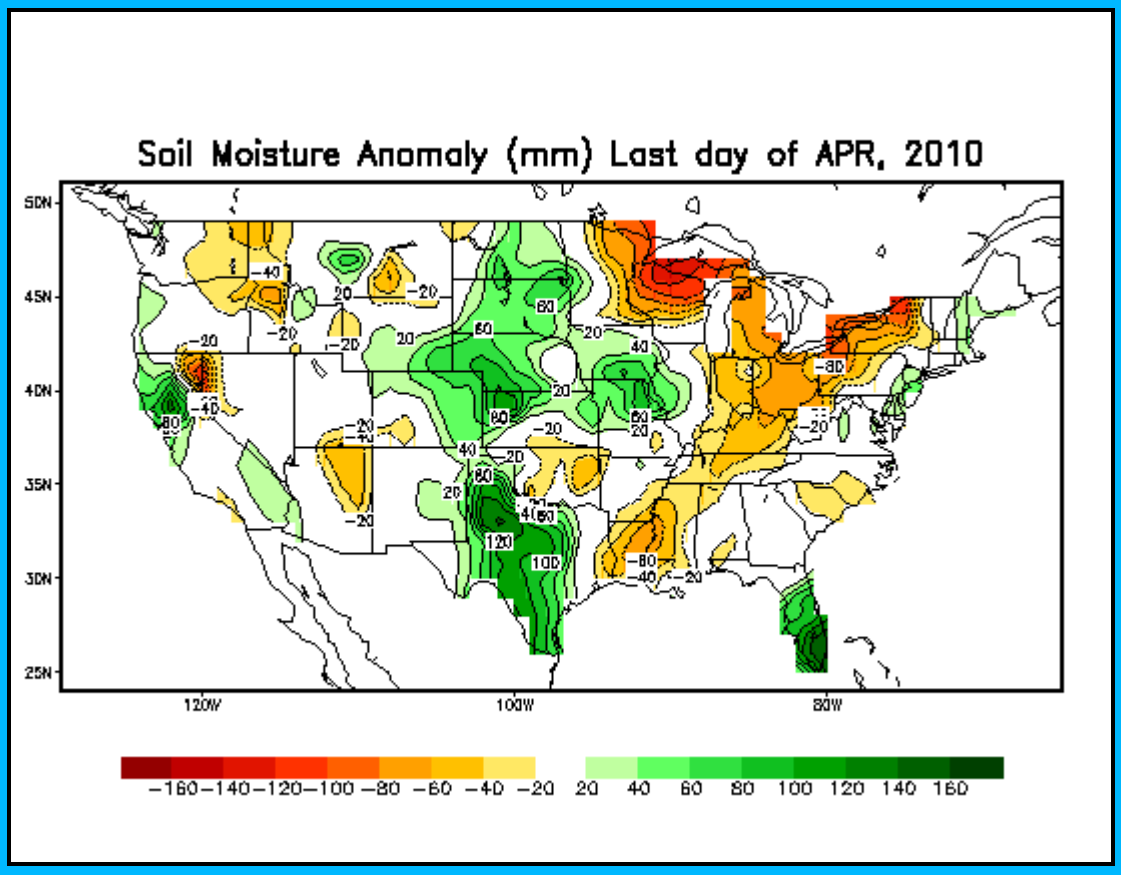
extended period of severe weather to the Arklamiss region beginning in the afternoon hours of Friday, April 23rd and lasting through the late evening hours of Saturday, April 24th. Scattered severe thunderstorms developed and moved across northeastern Louisiana and parts of Mississippi during the afternoon and evening hours of the 23rd. Several reports of large hail were received from across the area, including golf ball size hail in Sunflower County. A tornado was reported over southern Leflore County. Rainfall across this area ranged from the 1.00 to 5.00 inches. Severe weather became more intense on the 24th with large hail up to golf ball size being reported. Five tornadoes touched down across the HSA. All but one was either an EF-1 or EF-2 storm; however, a long track tornado formed near Tallulah Louisiana intensifying rapidly as it moved northeastward. This storm was classified as an EF-4 as it crossed Yazoo and Holmes Counties. The storm completed a 149 mile trip across the area in Oktibbeha County in Northeast Mississippi. Ten casualties were caused by this intense storm. Rainfall along this tornado was only 0.75 inches or less. Elsewhere, rainfall was scattered with a little greater concentration of 0.50 to 2.50 inches over Southeast and East Mississippi. The cold front finally moved to the Mississippi Coast by the morning of the 25th. High pressure built in behind the front on the 25th.

Some scattered light showers were reported from late on the 26th into the early hours of the 27th as an upper level trough pushed through the region. High pressure moved back into the area on the 28th. As the high pressure center shifted to the east and an upper level trough deepened over the U.S. Southwest on the 29th and 30th, winds shifted to the south bringing warmer and more humid air to the HSA. A small area of heavy rainfall, ranging from 1.00 to 4.50 inches, developed over Holmes, Carroll, Montgomery, and Webster Counties on the evening of the 30th. Scattered to widely scattered showers were noted over the remainder of the area on the 30th.

River and Soil Conditions...

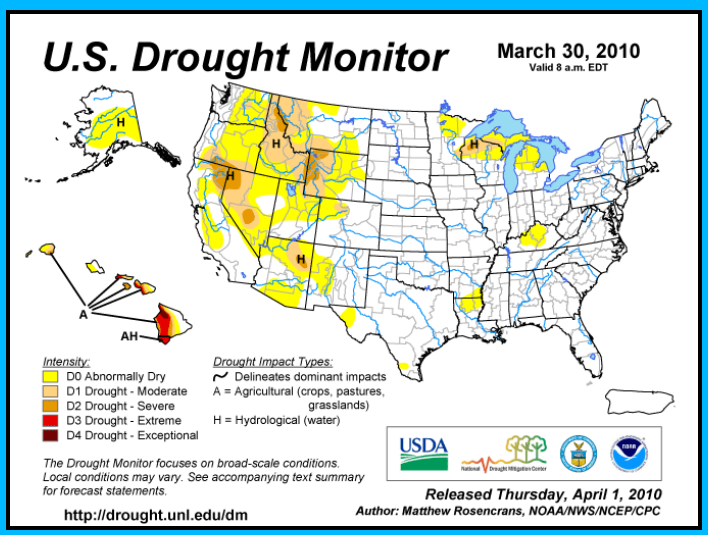
Below normal rainfall continued over much of the HSA. Rainfall was less than 25 percent of normal over southern portions of Northeast Louisiana and Southwest and West Central portions of Mississippi. Much of the remainder of the area had rainfall totals between 25 to 75 percent of normal. The only exception to this trend was an area from northern Holmes and Carroll Counties to Lowndes and Noxubee Counties where rainfall ranged from 100 to 200 percent of normal for the month.

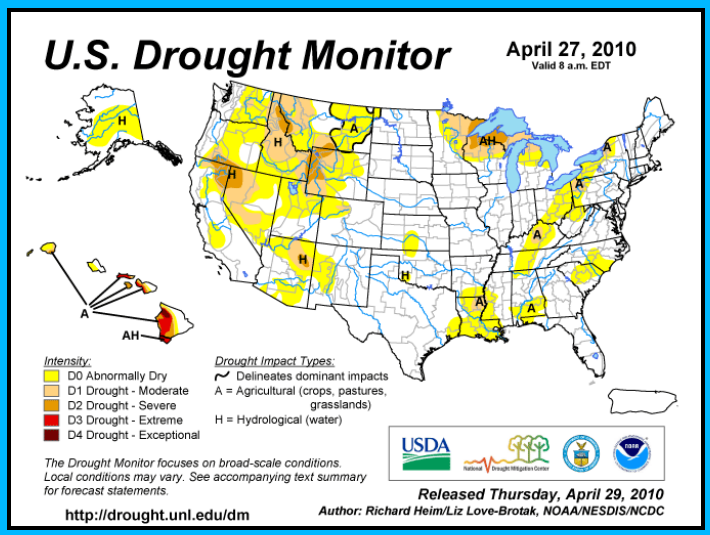
Warmer temperatures, plant growth, and below normal rainfall caused soils to dry significantly. Soil moisture plummeted in the drier areas of Southeast Arkansas, Northeast Louisiana and West and Southwest portions of Mississippi. Soil moisture deficits of 2.00 to 3.00 inches were common over this region. Remaining areas in Mississippi had soil deficiencies of 1.00 to 2.00 inches.



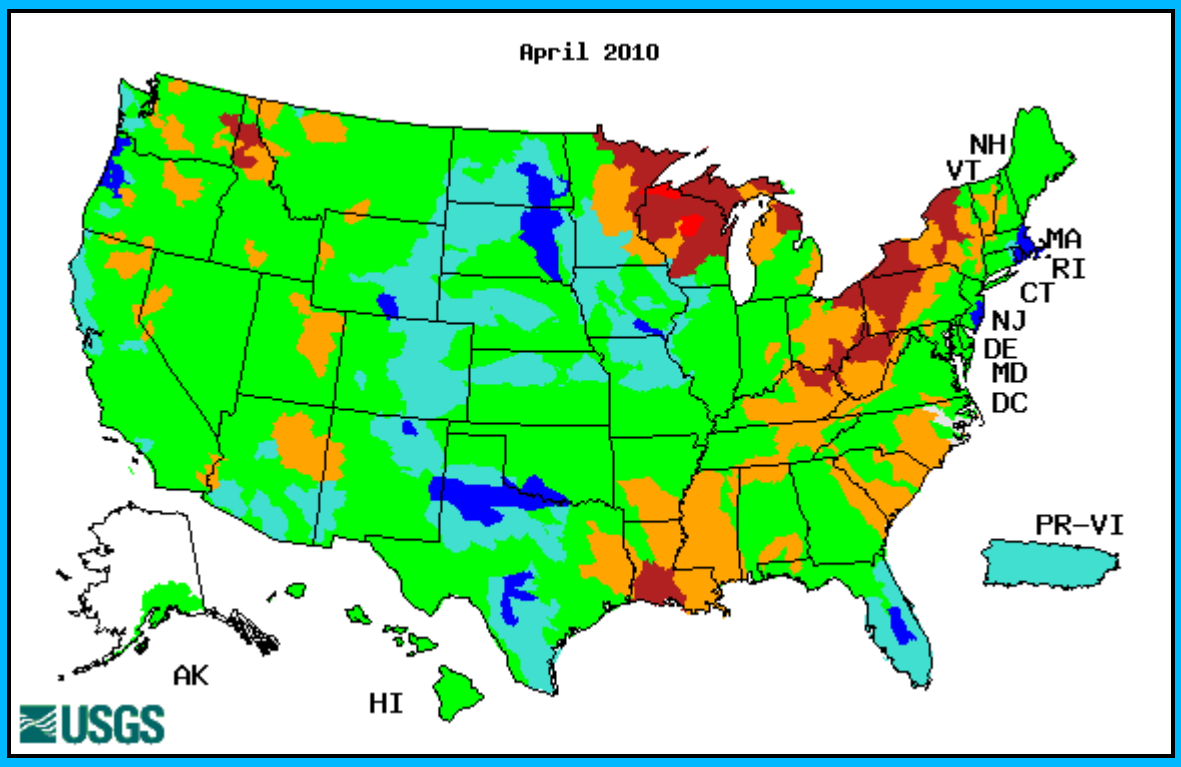
Soil Moisture anomaly (departure from normal): (25.4mm = 1 inch)

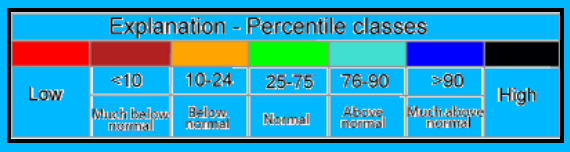
A comparison of the March 30th U.S. Drought Monitor to the April 27th U.S. Drought Monitor showed areas of abnormally dry conditions expanding rapidly over Northeast Louisiana, Southeast Arkansas, and West and Southwest Mississippi. Moderate drought conditions appeared in northern portions of Northeast Louisiana.





The United States Geological Survey's (USGS) April 2010 river streamflow records were compared with all historical April streamflow records. Streamflow was below normal over most of the river basins in the HSA except for near normal stream flow over the Tombigbee River Basin.





Heavy rainfall over North Central and Northeast Mississippi caused the Upper Big Black River and Tibbee Creek to exceed flood stage. Little change to minor rises occurred on the remaining river systems in the HSA.

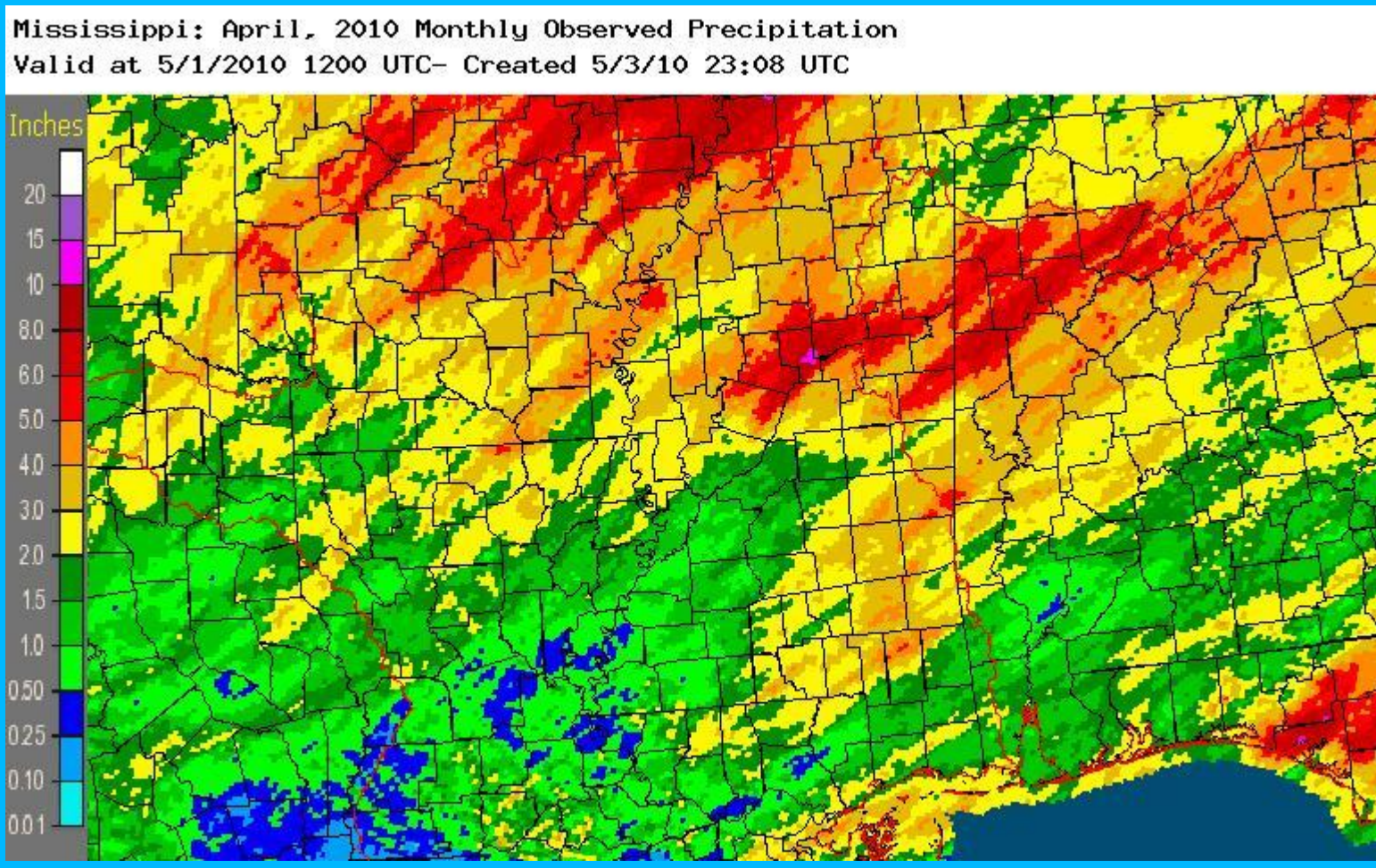
The Mississippi River from Arkansas City to Natchez crested around the first week of the month and continued to fall for the remainder.

Based on normal to below normal soil moisture conditions, normal streamflow conditions, and an expected normal rainfall over the HSA, the flood potential for next 60 to 90 days is expected to be:

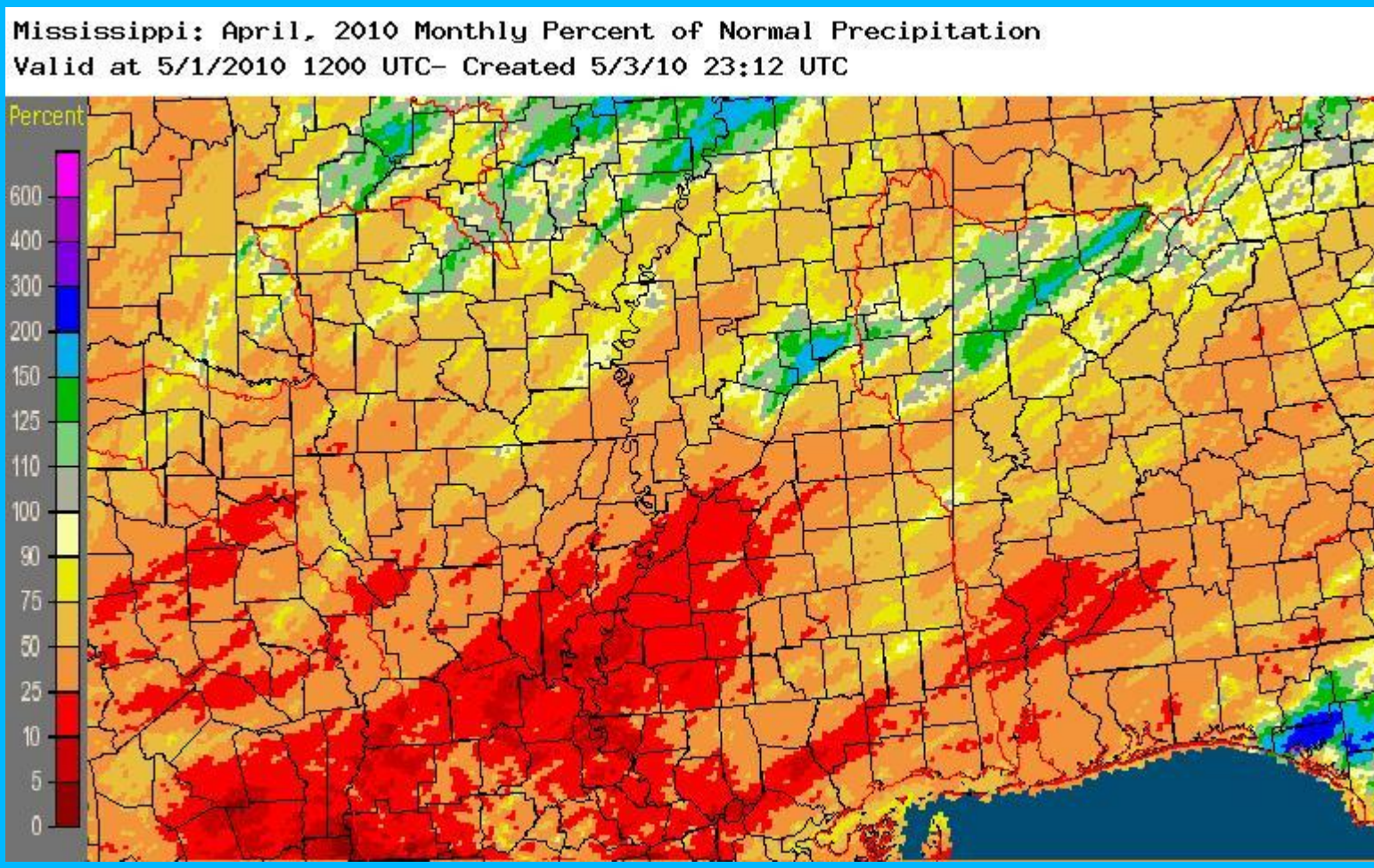
Pearl River System:	Below Normal.
Yazoo River System:	Below Normal.
Big Black River System:	Normal to Below Normal.
Homochitto River System:	Below Normal.
Pascagoula River System:	Below Normal.
Northeast LA and Southeast AR:	Below Normal.
Tombigbee River System:	Below Normal.
Mississippi River:	Normal.

Rainfall for the month of April

The largest rainfall amounts in the HSA from NWS Cooperative Observer reports during the period from 7 am on March 31st until 7 am on April 30th were: 6.25 inches at Eupora, MS; 6.13 inches at Vaiden, MS; 5.75 inches at Macon, MS; 5.54 inches at Winona, MS; 4.66 inches at Bluff Lake, MS; and 4.62 inches at Dermott, MS.



April 2010 Rainfall Estimates



April 2010 Percent of Normal Rainfall Estimates

Note: Observer rainfall and MPE may differ due to time differences.

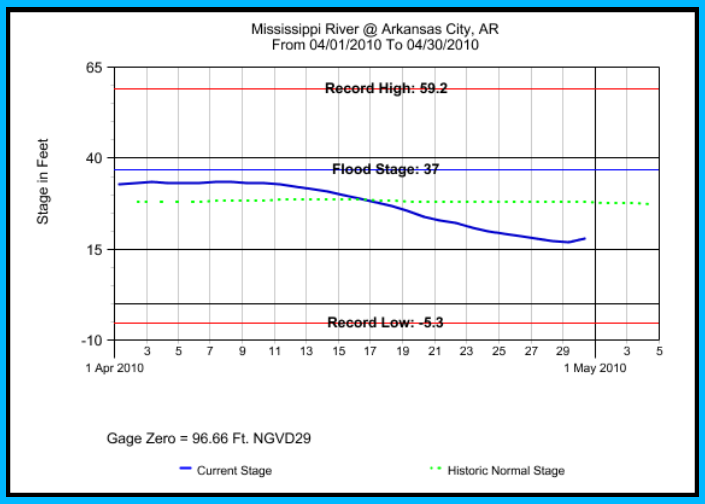
April rainfall for Selected Cities...

City (Airport)	April Rainfall	Departure from normal	2010 Rainfall	2010 Departure from Normal
Jackson, MS	1.62	-4.36	14.25	-7.64
Meridian, MS	2.97	-2.65	14.60	-2.65
Greenwood, MS	5.38	-0.28	16.76	-0.28
Greenville, MS	1.66	-4.15	9.48	-5.60
Hattiesburg, MS	3.67	-2.87	14.89	-4.42
Vicksburg, MS	2.11	-4.29	9.89	-7.49

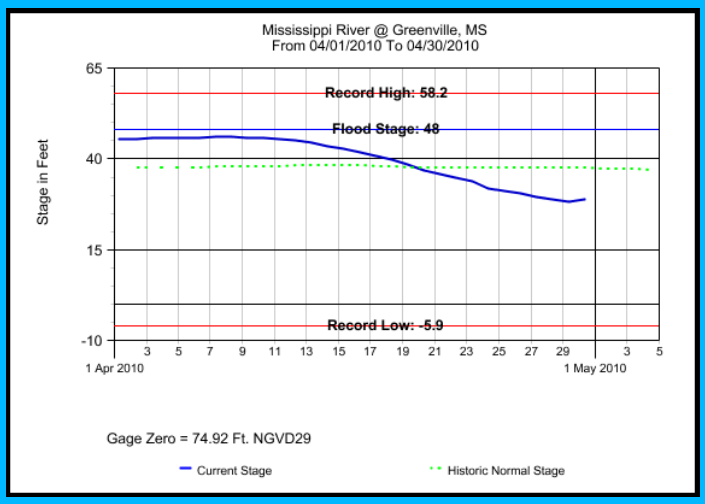
Mississippi River...

Mississippi River Plots for April, 2010

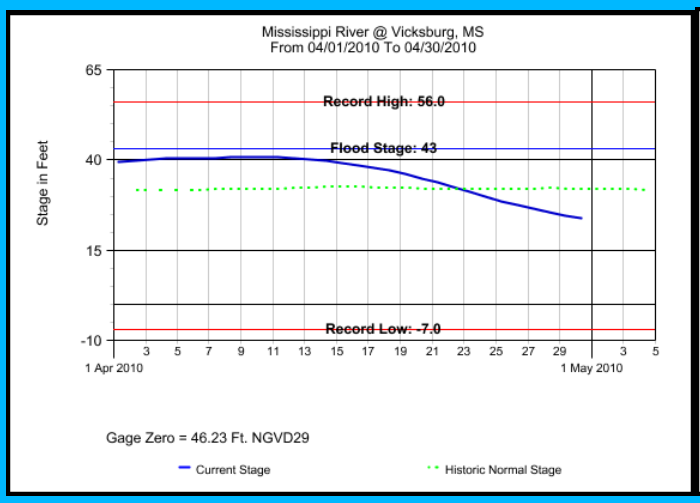
Plots Courtesy of the United States Army Corps of Engineers



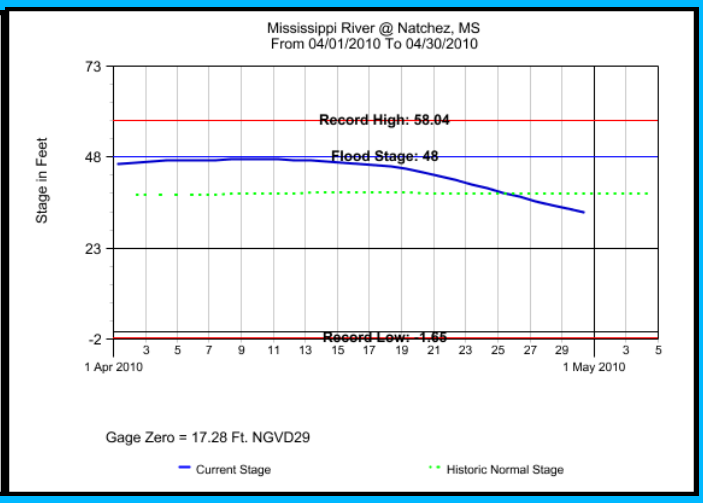
Arkansas City, AR



Greenville, MS



Vicksburg, MS



Natchez, MS

Preliminary high and low stages for the month:

Location	FS	High Stage(ft)	Date	Low Stage(ft)	Date
Arkansas City, AR	37	33.52	04/08/10	16.82	04/29/10
Greenville, MS	48	46.14	04/08/10	28.29	04/29/10
Vicksburg, MS	43	40.94	04/09/10	23.84	04/30/10
Natchez, MS	48	47.47	04/09/10	32.39	04/30/10

Total Flood Warning products issued: 20
Total Flood Statement products issued: 2
Daily Rainfall Products (RRA'S) issued: 30

Daily River Forecast Products (RVS'S) issued: 30
Daily River Stage products (RVA'S) issued: 30

Marty V. Pope

Service Hydrologist

&

Latrice Maxie

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Note: Provisional stage and precipitation data were furnished with the cooperation of the Mississippi, Louisiana, and Arkansas National Weather Service Cooperative Observer Programs, United States Geological Survey (USGS), United States Army Corps of Engineers (USACE), Pearl River Valley Water Supply District (PRVWSD), Pat Harrison Waterway District, Pearl River Basin Development District, and the Mississippi Department of Environmental Quality.

cc: USGS Little Rock District
USGS Ruston District
USACE Mobile District
USACE Vicksburg District
USACE Mississippi Valley Division
USGS Mississippi District
SRH Climate, Weather and Water Division
Lower Mississippi River Forecast Center
Pearl River Valley Water Supply District
Hydrologic Information Center
Southern Region Climate Center
Pat Harrison Waterway District
Pearl River Basin Development District